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BONDAR-CLEGG

5-9062-1

ENERGY,MINES AND RESOURCES CANADA
ENERGY,MINES & RESOURCES
CANMET CONTRACTS OFFICE
ROOM 166A-555 BOOTH ST.
OTTAWA, ONTARIO K1A 0G1

Date : 9-APR-86

RE: 07SQ.23440-5-906
RECOMMENDED VALUES FOR BITHOLITE ORE OKA-2

OUR REPORT 426-0049

ANALYSES:

5 ANALYSES RARE EARTH OXIDES
5 ANALYSES U, K BY DCP
5 ANALYSES CeO, La2O3, BY XRF
5 ANALYSES U FLUOROMETRIC

CONTRACT SERIAL NUMBER: OSQ85-00054

REQUISITION NUMBER: 23440-5-9062-1

CONTRACTOR: BONDAR-CLEGG & COMPANY LTD

TITLE: RECOMMENDED VALUES FOR
BITHOLITE ORE OKA-2

6 pp

AUG 19 1986

MICROMEDIA

Bondar-Clegg & Company Ltd.
130 Pemberton Ave.
North Vancouver, B.C.
Canada V7P 2R5
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BONDAR-CLEGG

# METHOD OUTLINES FOR OKA 2

OKA 2 was analysed for the requested elements by directly coupled plasma spectrophotometry (DCP). In addition cerium, lanthanum and yttrium were determined by energy dispersive x-ray fluorescence. Uranium was determined by fluorometry.

To prepare the samples for analyses by DCP the following digestion process was followed.

1. Weighed subsamples (0.2 gm) were taken of the mixed contents of the submitted bottle #414.

2. The subsamples were then placed in teflon containers to which were then added nitric, hydrofluoric and perchloric acids.

3. The containers were placed on a hot plate and digested until heavy fumes of perchloric acid were generated.

4. After cooling the digestions, hydrochloric acid was added, the containers replaced on the hot plate to warm then the contents bulked to specific volume with de-ionized water.

5. Standards were prepared in a similar manner. These included Can Met standards Syenite 2 and Syenite 3 as well as in house standards of somewhat higher concentrations of some of the other elements requested.

6. Aliquots were taken to facilitate analyses of the higher concentrations.

7. Spectrophotometric determinations were derived from curves prepared from purchased standard solutions or pure salts.

Uranium was determined on subsamples of 0.2 gm weight that were decomposed with nitric acid only.

Subsamples were loosely packed in appropriate containers for analyses by x-ray fluorescence. Although weight is not significant if the specific gravity of the analysed samples is approximate to the calibrating standards, typically, an analytical weight is 5 grams.

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# CERTIFICATE OF ANALYSES

TO Department of Supply and Services

Science and Professional Services Directorate

11C1 Phase 111 Place du Portage

Hull, Quebec K1A 0S5

| MARKED | CeO2 | Dy2O3 | Er2O3 | Eu2O3 | Ho2O3 | La2O3 | Lu2O3 | Nd2O3 | Pr6O11 | Sm2O3 | Tb4O7 | Gd2O3 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Percent | Percent | Percent | Percent | Percent | Percent | Percent | Percent | Percent | Percent | Percent | Percent |
| Bottle 414 OKA 2 - 1 | 12.63 | 0.232 | 0.0985 | 0.278 | 0.0303 | 5.52 | 0.0025 | 6.145 | 2.221 | 1.208 | 0.0616 | 0.630 |
| Bottle 414 OKA 2 - 2 | 12.74 | 0.229 | 0.0951 | 0.273 | 0.0269 | 5.73 | 0.0025 | 6.360 | 2.353 | 1.205 | 0.0647 | 0.649 |
| Bottle 414 OKA 2 - 3 | 12.57 | 0.234 | 0.0886 | 0.267 | 0.0276 | 5.64 | 0.0024 | 6.153 | 2.167 | 1.202 | 0.0664 | 0.666 |
| Bottle 414 OKA 2 - 4 | 13.23 | 0.238 | 0.0952 | 0.259 | 0.0271 | 5.47 | 0.0025 | 6.287 | 2.108 | 1.240 | 0.0619 | 0.637 |
| Bottle 414 OKA 2 - 5 | 13.20 | 0.243 | 0.0942 | 0.262 | 0.0289 | 5.81 | 0.0025 | 6.126 | 2.038 | 1.186 | 0.0557 | 0.645 |

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# CERTIFICATE OF ANALYSES

TO Department of Supply and Services

Science and Professional Services Directorate

11C1 Phase 111 Place du Portage

Hull, Quebec K1A 0S5

| MARKED | ThO2 | Tm2O3 | Y2O3 | Yb2O3 | K2O | U | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Percent | Percent | Percent | Percent | Percent | Percent | Percent | Percent | Percent | Percent | Percent | Percent |
| Bottle 414 OKA 2 - 1 | 3.259 | 0.0091 | 0.321 | 0.0178 | 0.427 | 0.07 | | | | | | |
| Bottle 414 OKA 2 - 2 | 3.314 | 0.0091 | 0.306 | 0.0179 | 0.418 | 0.08 | | | | | | |
| Bottle 414 OKA 2 - 3 | 3.370 | 0.0091 | 0.299 | 0.0165 | 0.425 | 0.07 | | | | | | |
| Bottle 414 OKA 2 - 4 | 3.326 | 0.0091 | 0.292 | 0.0165 | 0.418 | 0.04 | | | | | | |
| Bottle 414 OKA 2 - 5 | 3.336 | 0.0091 | 0.296 | 0.0170 | 0.420 | 0.04 | | | | | | |

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# CERTIFICATE OF ANALYSES

TO Department of Supply and Services

Science and Professional Services Directorate

11C1 Phase 111 Place du Portage

Hull, Quebec K1A 0S5

** XRF Results **

| MARKED | CeO2 | La2O3 | Y2O3 | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Percent | Percent | Percent | Percent | Percent | Percent | Percent | Percent | Percent | Percent | Percent | Percent |
| Bottle 414 OKA 2 - 1 | 14.49 | 5.676 | 0.3050 | | | | | | | | | |
| Bottle 414 OKA 2 - 2 | 14.37 | 5.747 | 0.3220 | | | | | | | | | |
| Bottle 414 OKA 2 - 3 | 14.50 | 5.746 | 0.3098 | | | | | | | | | |
| Bottle 414 OKA 2 - 4 | 14.31 | 5.736 | 0.3110 | | | | | | | | | |
| Bottle 414 OKA 2 - 5 | 14.37 | 5.739 | 0.3044 | | | | | | | | | |

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# CERTIFICATE OF ANALYSES

TO Department of Supply and Services

Science and Professional Services Directorate

11C1 Phase 111 Place du Portage

Hull, quebec K1A OS5

** Fluorometric Results **

| MARKED | U | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Percent | Percent | Percent | Percent | Percent | Percent | Percent | Percent | Percent | Percent | Percent | Percent |
| Bottle 414 OKA 2 - 1 | 0.028 | | | | | | | | | | | |
| Bottle 414 OKA 2 - 2 | 0.030 | | | | | | | | | | | |
| Bottle 414 OKA 2 - 3 | 0.028 | | | | | | | | | | | |
| Bottle 414 OKA 2 - 4 | 0.028 | | | | | | | | | | | |
| Bottle 414 OKA 2 - 5 | 0.028 | | | | | | | | | | | |